

MAR-13-2006 MON 02:42 PM AMD

FAX NO. 4087493851

P. 02

Attorney Docket No. 039153-0694 (H1725)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Srinath Krishnan

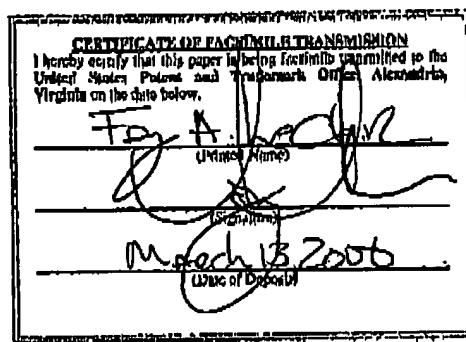
Title: SHALLOW TRENCH ISOLATION  
FOR STRAINED SILICON  
PROCESSES

Appl. No.: 10/769,835

Filing Date: 02/02/2004

Examiner: Menz, Douglas M.

Art Unit: 2891

**DECLARATION UNDER 37 C.F.R. 1.131**

Commissioner for Patents and Trademarks  
Washington, D.C. 20231

Sir:

I, SRINATH KRISHNAN, state and declare that:

1. I am the sole inventor of claims 1-8 currently pending in U.S. Patent Application Serial No. 10/769,835 entitled "SHALLOW TRENCH ISOLATION FOR STRAINED SILICON PROCESSES" now amended to "SHALLOW TRENCH ISOLATION PROCESS UTILIZING DIFFERENTIAL LINES" hereinafter the "'835 patent application."

2. I understand that in an Office Action dated December 12, 2005, claims 1-8 were rejected as being unpatentable based solely or in part on U.S. Patent No. 6,770,530 to Efferenn et al. entitled "METHOD FOR PRODUCING A SHALLOW TRENCH ISOLATION FOR N- AND P-CHANNEL FIELD-EFFECT TRANSISTORS IN A SEMICONDUCTOR MODULE."

3. I understand based on the information provided on the front page of Efferenn et al., that Efferenn was filed on March 10, 2003 as U.S. Patent Application No. 10/385,000. At least by November 11, 2002, I conceived in the United States the ideas set forth in claims 1-8 of the '835 patent application. Such conception is evidenced by the attached Exhibit A, which includes an invention disclosure form pertaining to the subject matter of the present application dated November 11, 2002. This invention disclosure form was completed during a patent harvesting session at Advanced Micro Devices, Inc.

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4. Based on the conception of the ideas set forth in claims 1-8, at least by the November 11, 2002, the subject matter recited in claims 1-8 was invented prior to the March 10, 2003 filing date of Fiferenn,

5. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 03/13/2006By: Srinath Krishnan  
SRINATH KRISHNAN

MILW\_1968870.2

-2-

Application No. 10/769,835

PRIORITY CODE	
A	B <input checked="" type="checkbox"/>
C	D

MONDAY, NOVEMBER 11, 2002

## TDG STRAINED SILICON ON INSULATOR (SSOI) PATENT HARVESTING

Technical Leader: Qi Xiang

## ADDITIONAL DISCLOSURE

TELE ID#: H 1725 Rec'd.date \_\_\_\_\_  
California & Asia: x44760, return to MS68; Texas: x55964 return to MS62; Dresden & Europe: x83401 Silke Kreuzschmer at MS E21-PP.This invention applies to: Project: , Product: , Process: , Technology , Other ,  
IMPORTANT Please identify any potential use: \_\_\_\_\_

List 2 to 5 key search words related to the invention: \_\_\_\_\_

Working title of invention: Differential STI lines for maximum stress  
modulation for improving the current in SOI transistors

## INVENTOR/SESSION PARTICIPANT ADDRESS INFORMATION IS ON THE NEXT PAGE (1A)

Inventor's signature: \_\_\_\_\_ date: \_\_\_\_\_

Inventor's printed full name: CRINATO KRISHNAN Citizenship: 

Employee #: \_\_\_\_\_ Extension: \_\_\_\_\_ Mail stop: \_\_\_\_\_ Home telephone( ) \_\_\_\_\_

AMD email address: \_\_\_\_\_ AMD office FAX( ) \_\_\_\_\_

Division: \_\_\_\_\_ Directorate: \_\_\_\_\_ Dept #: \_\_\_\_\_ Dept : \_\_\_\_\_ Manager: \_\_\_\_\_

Residence address: \_\_\_\_\_

Post Office address: \_\_\_\_\_

Co-Inventor's signature: \_\_\_\_\_ date: \_\_\_\_\_

Co-Inventor's printed full name: \_\_\_\_\_ Citizenship: \_\_\_\_\_

Employee #: \_\_\_\_\_ Extension: \_\_\_\_\_ Mail stop: \_\_\_\_\_ Home telephone( ) \_\_\_\_\_

AMD email address: \_\_\_\_\_ AMD office FAX( ) \_\_\_\_\_

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Residence address: \_\_\_\_\_

Post Office address: \_\_\_\_\_

## HARVESTING LAW FIRM/ATTORNEYS: FOLEY &amp; LARDNER

Joe Ziebert &amp; Ron Coslick

State total number of inventors here: \_\_\_\_\_. If there are more than four inventors, insert duplicate page 1.

Witness 1 initial: \_\_\_\_\_ Witness 2 initial: \_\_\_\_\_

## EXHIBIT A

Identify known relevant art (patents, publications, other information):

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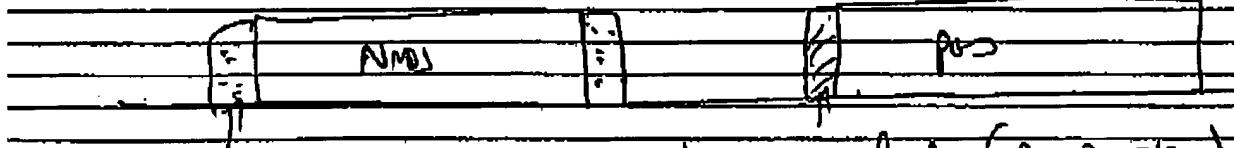
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State the problem solved by the invention: *Strain liner creates stress in the channel. Typically, the same liner grade (material or thickness) is beneficial for one type (either N or P) of CMOS. Thin & IDE helps to overcome this limitation by differentially including N & P type.*

Brief description and sketch of the invention (please attach copies of documents like AMD patent notebook pages, reports and drawings that are helpful in describing / understanding the invention):

*The idea here is to ~~not~~ use two types of different liner material on N & P to help create different desired types of stress.*

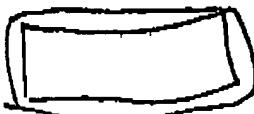
*For instance PMOS likes compressive stress (oxide) whereas NMOS likes tensile stress (N-side of oxide or other material that creates tensile stress). This can be achieved by masking (differential mask approach) to create to different degrees of the different liner materials.*



*liner material B*

*(dry heavily N-doped oxide)*

Patent notebook # \_\_\_\_\_ Page numbers \_\_\_\_\_ Number of drawings \_\_\_\_\_



Witness 1 initial: \_\_\_\_\_ Witness 2 initial: \_\_\_\_\_

## Advantages (check all that apply):

<input type="checkbox"/> simplifies manufacturing	<input type="checkbox"/> improves accuracy / precision	<input type="checkbox"/> reduces component parts
<input type="checkbox"/> reduces cost of manufacturing	<input type="checkbox"/> improves reliability	<input type="checkbox"/> improves signal to noise ratio
<input type="checkbox"/> improves density	<input type="checkbox"/> improves efficiency	<input type="checkbox"/> provides new functionality
<input type="checkbox"/> increases operating speed	<input type="checkbox"/> increases operating range	<input type="checkbox"/> other, explain below

Discussion of advantage(s) of the invention over other solutions  
(emphasize technical advance in the art as measured against known art):

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Please take special care to preserve documentary evidence of the original date of conception of the invention. AMD Inventors' notebooks with witness signatures are useful in this regard. Notebooks are issued on request to inventors by the local AMD site Technical Librarian.

Please attach copy of first written description(s) of invention, with dates, names of persons with whom the description was discussed.

Please attach copy of first drawing(s) of invention, with date(s).

Describe any external disclosure of invention, place, date, circumstances of disclosure, with copy of NDA.

Does plan exist to publish, disclose or sell? No , Yes . If yes, where and when?

Was invention jointly developed with participation of inventors from outside AMD: No , Yes   
If yes, Company name \_\_\_\_\_

If yes, name of AMD business contact and development contract no. \_\_\_\_\_

I have read and understood this disclosure and read and signed each page of the attachments:

Witness 1

signature: \_\_\_\_\_ Date: \_\_\_\_\_

Printed name: \_\_\_\_\_ Employee #: \_\_\_\_\_

Witness 2

signature: \_\_\_\_\_ Date: \_\_\_\_\_

Printed name: \_\_\_\_\_ Employee #: \_\_\_\_\_